### DEPARTMENT OF THE INTERIOR

## INTERIM REPORT

OF THE

# COMMISSIONER OF THE YUKON TERRITORY

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OTTAWA

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1906

## INTERIM REPORT OF THE COMMISSIONER OF THE YUKON TERRITORY.

Ottawa, December 15, 1906.

The Hon. Frank Oliver,
Minister of the Interior,
Ottawa.

SIR,—In compliance with your instructions I have the honour to submit a report upon the mining operations and general conditions in the Yukon Territory during the past summer.

#### TRANSITION PERIOD.

In my annual report for the year ending June 30, 1906, I pointed out that the methods of placer mining in the territory were rapidly changing, and that the cruder methods of working the ground were being discontinued, and replaced by more extensive and economical ones. This change has been steadily going on every year since the discovery of the camp, but at no time has it been more marked than during the past summer. Large hydraulic plants have been in operation, and others of enormous magnitude have been started. Dredges have also been installed, and they have proven to be an unqualified success. Even the old form of prospecting by shaft sinking has been largely superseded by the use of steam churn drills. The operations of the dredges this year have confirmed the results obtained by the pioneer dredges of last year, viz., that the auriferous gravels of the Klondike district are admirably adapted to this manner of working. Indeed, the results have been so gratifying that already more dredges have been ordered from the factories than can possibly be supplied next season. The deposits of gold-bearing gravel in the Klondike which can be treated by dredging and hydraulicking are so extensive that placer gold mining there is absolutely assured to be a vast and permanent industry. During the season, Mr. R. G. McConnell, of the Geological Survey, at the head of a competent party, undertook to measure and estimate the values of these gravels near Dawson. His report, I am sure, will prove beyond doubt their great extent and richness.

The great advantage of operating claims by dredges and efficient hydraulics has become so apparent that during the past summer the owners of many of the claims on the older creeks and hills have preferred not to work their properties by the more primitive methods, but to await the installation of dredges or a large supply of water. For this reason the number of gold-yielding claims has been temporarily greatly reduced. Notwithstanding this fact, however, the output up to October 31, of this year, amounted to \$5,179,948.50. Last year the output for the whole year amounted to \$7,160,032.75. In view of the transition going on in the mining industry, the output for this year is quite satisfactory. On the creeks situated north and west of the Indian River divide, namely, Bonanza, Eldorado and Hunker creeks, with their tributaries, the primitive placer mining methods have almost entirely given way to modern methods, but, on the Indian River side of the divide, owing to the expense of transportation, and the generally more virgin nature of the claims, primitive placer methods, aided by a few mechanical contrivances, are still employed. This section includes Dominion, Gold Run, Eureka, Sulphur and Quartz creeks, and their tributaries. Of these latter creeks Lower Dominion has been very active during the past summer, and will be worked to its fullest extent throughout the coming winter, upwards of five hundred miners being there employed at the present time. Next year conditions will be very similar to what have prevailed this season, except for the fact that the number of dredges in operation

will be increased by those constructed this summer. During the season following that, however, the number of dredges in operation will be materially increased, and because of this, as well as of the availability of the extensive hydraulic system now being installed by The Yukon Consolidated Goldfields Company, the yield of gold should be vastly increased.

I append hereto a statement giving the number of claims worked on each creek, and the hills and benches thereof and showing the method of mining in each case.

#### DREDGING.

During the past summer five dredges were in operation, an increase of two over last year. The season was very favourable to that method of mining, as it opened early and closed late; the largest of the dredges being in operation for 170 days. As a rule the dredging season can be counted upon as lasting from early in May until the second week in October. The dredge belonging to the Canadian Klondike Mining Company, Ltd., was operated on the Boyle concession, situate on the Klondike river. This dredge is operated by electricity generated by means of a steam turbine. It has a capacity of 3,000 cubic yards per day, and handled during the season about 400,000 cubic yards. The cost of this dredge, placed on the ground, with the accompanying power plant was \$300,000. This power plant is capable of generating sufficient power to run two more similar dredges, and it is the intention of the company to install two more upon their property next summer.

The Bonanza Basin Gold Dredging Company operated a new dredge on their river claims near the mouth of the Klondike river. This dredge is operated by steam direct. It has a theoretical capacity of 3,750 cubic yards per day, but on account of the length of the ladder and the shallowness of the ground the amount of gravel excavated amounted to only 125,000 yards. This dredge is understood to have cost, placed on the ground, \$154,000.

The Lewis River Dredging Company continued to operate their claims on Bonanza creek with a dredge which they imported in 1901. The motive power of this dredge is steam direct. It has a capacity of 1,200 cubic yards per day, and excavated about 100,000 yards during the past summer. This dredge cost in the vicinity of \$75,000.

The dredge belonging to the Ogilvie Dredging Company was employed during the summer for prospecting purposes on the submerged bed of the Klondike river. The motive power of this dredge is steam direct. It has a capacity of 400 cubic yards per day, and during the season handled 30,000 yards. This small dredge cost about \$25,000.

The Forty-mile Dredging Company imported and assembled a large dredge during the summer in time to operate for a few days before the closing of the season. This dredge is similar to that operated by the Bonanza Basin Gold Dredging Company, and is to be operated on the submerged bed of Forty-mile river.

In addition to these dredges which were in commission, three others were imported and partially assembled during the season by the Yukon Consolidated Goldfields Company. This company's dredges are of a very large capacity, and will be ready to work their Bonanza creek claims upon the opening of next season. Another modern dredge of large type was imported late in the season and is to operate in the Forty-mile district. It also will be in readiness for next season.

#### HYDRAULICKING.

One of the most notable incidents in connection with mining in the Klondike during the past summer was the grouping of claims for the purpose of working them in an extensive way, and the consequent acquiring of large tracts of ground for this purpose. Foremost in these operations was the Yukon Consolidated Goldfields Company. This company acquired practically all of Bonanza creek from the town of Grand Forks down (including many of the adjoining hills), a large portion of Eldo-

#### SESSIONAL PAPER No. 25a

rado creek, and much of Hunker creek. To operate these properties they have determined upon installing the most elaborate and modern appliances. In addition to the three dredges assembled last summer they contemplate installing many more next year. In order to work their hill and bench claims it is necessary to have a large supply of water for hydraulic purposes. The lack of this has been seriously felt in working these rich hills in the past. Last summer, as in previous summers, the mines worked by the hydraulic method could only be operated for a short period of the seasen. To overcome this the Yukon Consolidated Goldfields Company have started the construction of a great dam near the head of Bonanza creek which will back the water some two miles up the creek and conserve the spring freshets. The company also constructed for a similar purpose an enormous reservoir on the hill between Dawson City and the Klondike river. In addition to the supply of water derived by these means they have begun the construction of a large ditch whereby water for hydraulic purposes will be conducted to their hill-claims from the Twelve-mile river. This ditch will have a capacity of carrying 10,000 miners' inches of water and will be in the neighbourhood of fifty miles long. Of this fifty miles eleven miles will consist of steel and wood pipe, fifteen miles of flume and the rest will be ordinary ditch work. The depressions encountered along the route of this ditch will be crossed by means of inverted syphons ranging from 30 inches to 42 inches in diameter. The largest of these depressions is the Klondike Valley, where the pipe will be under a head of 1,100 feet. During the past summer five miles of this ditch were completed. In the construction of the system every modern method is employed. The ditch is being excavated by means of a number of steam-shovels, which were operated last summer at a cost of \$130 per day per shovel. A saw-mill has been erected in the vicinity of the work, and all lumber used therein is sawn on the spot. During the season this amounted to about 3,000,000 feet. The company has already cleared the right of way for fifty miles to a width of thirty feet. In connection with this construction several roads were necessary for the transportation of material and supplies, and these were built by the company at its own expense. The cost of this work during the season up to September 30 last was \$448,707. The work will be pushed vigorously all next season, and it is hoped that the water will be available on the Klondike hills for the season of 1908. The owners of the Matson and Doyle concession also completed during the summer a very costly dam on Adams creek for the purpose of conserving the water wherewith to hydraulic their property.

In addition to these large pieces of hydraulic work many small ditches of from one to two miles in length were constructed by other companies and by individual miners.

#### WATER-POWER.

The installation of dredges in the Yukon has drawn attention to the desirability, if not the necessity, of securing economical power. The supply of wood fuel for generating steam is becoming scarcer. To preserve the forests and prevent their being monopolized by speculators, the timber regulations were effectively amended early this year. The cost of coal also up to the present time, has been more than proportionately high. This condition has led those interested in dredge mining to seek the natural water-power of the country. Under the regulations adopted by order in council last spring a large number of applications have been filed for water-power. There can be no doubt but that this source of power will have to be largely adopted in order to make a success of some of the dredging projects now contemplated. During the past summer the Yukon Consolidated Goldfields Company began the construction of a large waterpower plant on the Little Twelve-mile river, for the purpose of supplying power to the dredges which they have already, and will hereafter construct. The power station was nearly completed, and the transformer station is already completed. The transmission line, which is thirty miles in length, and will carry a tension of 33,000 volts, was also completed.

Up to September 30, last, \$191,298 was expended in connection with the installation of this power plant. It is expected that it will be ready for use by June 15 next.

#### ACTIVITY IN MINING.

Another noticeable feature in the mining industry of the Klondike during the past summer was the great activity displayed by prospectors and claim-locators. The extent of this very gratifying condition can best be shown by comparing the number of claims staked during the two past years with those staked during the four months of July, August, September and October of this year. During the fiscal year ending June, 1905, there were 785 claims staked and 505 during the fiscal year of 1906. During the said four months of the present season there were 1,388 claims staked, that is to say, that during the said four months there were more claims staked than during the whole of the two preceding years. This striking evidence of the vitality of the camp can be attributed largely to the circumstances of many more claims being now workable at a profit because of improved modern methods, to the acceptable innovations incorporated in the mining laws by the Yukon Placer Mining Act passed at the last session of parliament, and to the greater feeling of contentment and confidence felt by the mining community. This great activity was reflected in the Gold Commissioner's office where for upwards of two months the staff worked every evening and had not caught up with the rush of work when I left on November 14, last.

This Yukon Placer Mining Act, as above stated, has had a very stimulating effect upon the mining industry. It gave a stability to the mining laws which formerly did not exist. Its provisions abolishing free miners' licenses, providing for the inexpensive and speedy adjustment of disputes, reducing mining litigation, preventing claim-jumping, facilitating the staking, recording and holding of claims, and guaranteeing title, have been equally acceptable to the prospector, individual miner and investing capitalist.

Under its provisions the prospector has become more active, and more discoveries have been made, and claims staked, than for years previous, while at the same time capital is pouring into the country more heavily than at any previous period in the history of the Klondike, one company alone (the Yukon Consolidated Goldfields Company) having invested during the past season in the vicinity of three million dollars, and contemplates a further investment of an equal amount next year.

#### QUARTZ MINING.

While in the north end of the territory placer mining has consumed nearly the entire attention of miners, in the south end, in the vicinity of Whitehorse and Conrad City, quartz mining has been the principal industry. In the immediate vicinity of Conrad City about \$600,000 has been spent developing the quartz properties. The 'Venus,' 'Vault,' 'Montana' and 'Big Thing' mines have been energetically and systematically developed. In the Wheaton and Watson river districts some ore carrying exceedingly high values was discovered during the summer, and a large number of claims were staked in consequence. Sufficient work, however, has not been done in this section to warrant an opinion as to the extent of these ore-bodies. In the immediate vicinity of Whitehorse several copper properties are being developed.

The greatest amount of work on these has been done on the 'Pueblo' claim. This claim is located five miles from Whitehorse, and was worked steadily during the summer. An enormous body of copper ore has been uncovered, and there is every indication that this will prove a large and valuable mine. The changes made in the quartz mining regulations last spring, whereby miners' licenses were established and non-contributing partners forfeited their interest to those developing a mine, have proven very satisfactory.

SESSIONAL PAPER No. 25a

#### HYDRAULIC LEASES.

During the past season a great deal of interest was taken in the action of the government with respect to the cancellation of certain hydraulic leases in the Yukon, commonly called 'concessions.' The treatment of these concessions has been the subject of much local concern for years past. They were granted for large tracts of mining land upon the strength of representations made to the government, and upon the distinct understanding that the ground included within the concessions was of too low a grade to permit of its being worked by the ordinary placer mining method, and that it could only be profitably worked by the installation of costly modern machinery, or extensive hydraulic works. This fact is evident from the correspondence which took place between the lessees of the various leases and the government, prior to the issuance of the leases. It is also made clear by the recitals and provisions contained in the leases. For instance, one of the recitals reads: 'And whereas it has been decided that it is desirable to introduce hydraulic mining into the said Yukon Territory, and that before the lessee would be warranted in making the large expenditure of money necessary to the proposed undertaking, he is entitled to have secured to him . . . . the exclusive right of extracting . . . . all royal or precious metals from, in, under or upon the said tract of lands.' And one of the provisions (section 4) of the leases specifically requires 'that the said lessee shall have sufficient hydraulic or other mining machinery in operation on the said demised premises within one year from the date hereof to permit of his beginning active operations for the efficient working of the rights and privileges hereby granted.'

It was unquestionably the intention in granting these large tracts of placer ground, that they should be efficiently worked on a large scale commensurate with the magnitude

of the grant.

Some of these concessions, namely the 'Clendennan,' 'Miller Creek,' 'Boyle,' 'Matson and Doyle,' and 'Williams' concessions are being worked in a large way by means of extensive hydraulic plans, or costly modern machinery. The lessees of these concessions are showing an appreciation of the spirit and letter of these leases.

A number of the concessions, however, have been worked merely by ordinary placer mining methods, such as the individual miner employs upon his small claim; and this, after they were acquired upon the plea that the ground was too poor to be worked by such crude methods. In some cases these large tracts of land were tied up without even being worked in this indifferent manner, while in a few others the lessees have played the part of landlord, and, contrary to the provisions of their leases have let out parts of their concessions to individual miners to work on a percentage basis under a sub-lease or 'lay.' In all these latter cases the representations and intention which prompted the granting of the leases had not been fulfilled, and when the facts were established steps were taken to secure the cancellation of the leases, and the throwing open of the ground covered by them to ordinary location. The 'Anderson,' Bronson and Ray,' 'Herman,' 'Quartz Creek,' Ensel,' and 'Scrogie' concessions were accordingly cancelled. This ministerial action was taken as a preliminary step to having the question of the sufficiency of the lessees' compliance with their leases determined by the courts. Pending the decision of the courts the lessees have been allowed to remain in possession. In order to facilitate a settlement of the matter without prolonged litigation the lessees were notified that if they surrendered their privileges under their respective leases they would be allowed claims within their concessions ranging from three to five, according to their degree of compliance with the terms of said leases. The owners of the 'Quartz Creek' concession took advantage of this offer. The other lessees, however, have not accepted the proffered settlement, and the government has prepared and entered suits in the matter for the adjudication of the courts. These cases are now pending.

At the time this action was taken the lessees of fou other concessions, namely: Crueger,' Grotschier,' McConnell,' and 'Croteau' co cessions were notified that the work performed upon them was not considered wholly satisfactory, and that there-

after they would have to comply more strictly with the terms of their leases. Since then the 'McConnell' concession has been abandoned, and the ground comprised within it staked by individual miners.

It is now well understood in the Yukon that the holders of concessions must develop their property in the efficient manner intended and specified when they received their leases, otherwise their privileges will cease.

#### AGRICULTURE.

While mining is, and will always be, the great industry of the territory, I am pleased to report that during the last season more attention has been given to agriculture than formerly. During the summer sufficient ground was brought under cultivation in the vicinity of Dawson to practically supply the local demand for vegetables. Hay was also grown more extensively than in former years, and from the profitable experience this summer of those engaged in these pursuits it is probable that next year will see many others giving their attention to agriculture. Last spring homestead regulations for the Yukon were passed by order in council. Under them agricultural land can now only be acquired by actual settlement, and the conditions are so liberal to bona fide settlers that I anticipate much more land will be cultivated under their provisions.

#### RAIN-MAKING EXPERIMENTS.

I have referred above to the great scarcity of water experienced by hydraulic miners in the Klondike district during the summer season. So urgent has been the necessity for water for hydraulic purposes that experiments were undertaken last summer to determine if possible whether the rainfall could not be augmented by artificial means. A contract was entered into between a number of the largest mine-owners and operators in the Klondike district, the government of the Yukon Territory, and Mr. Charles M. Hatfield of Los Angeles, California, who had conducted many experiments of this nature in the arid districts of California. Under the terms of the contract if the said Hatfield produced 'a sufficient rainfall to ensure, as far as an ample rainfall would, a successful and prosperous summer in the placer-mining industry,' the fact to be determined by a board appointed by the several parties to the contract, he was to receive the sum of \$10,000, of which \$5,000 was to be contributed by the said mine-owners and operators, and \$5,000 by the territorial government; and in the event of the said board determining that he had not been successful he was to receive the actual travelling and living expenses of himself and assistant from Los Angeles to Dawson and return. The appropriation of \$5,000 by the territorial government was approved by the Yukon Council, both the elected and appointed members unanimously supporting same. Mr. Hatfield arrived in Dawson on June 5 last, and commenced his demonstrations on June 11, on a high eminence called the 'Dome,' about thirty miles from Dawson. On Hunker, Sulphur, Gold Run and Dominion creeks, the rainfall for the month of June was above the average, but on Bonanza and Eldorado it was below normal. During the early part of July there was no increase over the average of former years. Accordingly at a meeting of the aforesaid board, held at Dawson on July 23, it was decided that 'in the opinion of this committee the contract entered into on July 10, 1905, has not been carried out, and that Mr. Hatfield be notified that his contract is terminated.' A copy of this decision by the board was immediately sent to Mr. Hatfield, who thereupon desisted from further experiments. The government of the Yukon Territory paid the sum of \$1,153.05 to Mr. Hatfield in full settlement of all its liability under said contract.

SESSIONAL PAPER No. 25a

#### ROADS.

During the summer considerable work was done in connection with roads, trails and bridges throughout the territory. The existing roads were repaired and brought up to a good state of efficiency. The exceedingly high water in the spring did much damage to the roads in all parts of the territory, principally to the main trunk road out of Dawson to Bonanza and Hunker creeks, and to the road from Whitehorse to Kluane. The former road, which last spring during the said high water was impassable for several days, has been diverted in places and raised. The Miller and Glacier road, sixty-five miles in length, has been put in very good condition. The district served by this road is a most promising one, and the improvement on the road will do much towards its development. The winter road, between Dawson and Whitehorse, 330 miles long, has been put in a good state of repair at a cost of about \$9,000.

The up-keep of this road is expensive, and will each year require considerable expenditure. In the Stewart river district the Duncan-Highet creek roads were thoroughly repaired at a cost of \$10,000. In consequence of this work the cost of freighting to these promising creeks has been materially reduced. The gravel on Duncan creek is deep and all efforts to prospect bedrock have heretofore proven unsuccessful on account of the inrush of water in the shafts. Last summer the territorial government purchased two pumps for use in assisting miners to reach bedrock and prove the creek. These pumps are now in use on claim No. 53, and all indications point to a valuable discovery being made. A winter trail was constructed from Clear creek to Mayo. This obviates the necessity for travelling by the dangerous winter route along the Stewart river. A trail was built up Barker creek fifteen miles, and to the Black Hills creek fifteen miles, thereby giving easy access to these new creeks. These trails have already been taken advantage of by the miners and prospectors. The Sulphur creek road was extended four and a half miles. The extension of this road enables the residents of lower Dominion creek to travel to and fro from Dawson without taking the Dome road. The road down Dominion creek was extended two and a quarter miles, thereby enabling miners to get supplies to this portion of the creek, where there is now considerable mining work being done. During the summer the Klondike Mines railway was constructed from Dawson to Sulphur springs (the Dome) via Bonanza creek, a distance of about thirty miles. In order to enable the people on Sulphur, Gold Bottom, Quartz, Gold Run, Dominion and Hunker creeks to take advantage of this railway, roads were constructed from this elevated terminal point (Sulphur springs), down Sulphur, Gold Bottom and Quartz creeks. In the southern part of the territory a number of roads were built to assist in the development of the mines near Conrad City and Whitehorse. A splendid wagon road was constructed to the Pueblo mine, back of Whitehorse, over which ore is now being drawn for export. A road was built from Carcross to Conrad, thereby avoiding the necessity of using the lakes in the spring and autumn, which hitherto has been a great source of danger. A trail was constructed from Robinson, on the White Pass railway, to Watson river. This trail was at once taken advantage of by the quartz miners of that section. The road on Livingstone creek was put in first-class condition. This is a very promising creek, and last season, with a few men, produced \$100,000.

The road from Whitehorse to Kluane, 140 miles, was repaired. The new roads constructed will prove of great service in opening up the territory and facilitating mining.

#### LEGISLATION BY COUNCIL.

The Yukon council met in the month of July and passed a number of ordinances affecting local affairs. Principal among these were:—

(a) An amendment to the assessment ordinance; whereby taxation by assessment upon land and trades licenses was extended to certain towns in the territory. The 25a-2

towns of Whitehorse and Grand Forks have been brought under the operation of this ordinance.

(b) A succession duties ordinance was passed; it being framed upon the lines of the British Columbia Act, the succession dues being made identical with those in that province.

(c) The juries ordinance was amended so as to permit of juries being summoned

in other parts of the territory besides Dawson city.

(d) An ordinance dealing with the preparation of voters' lists, and the conducting of elections of members to the Yukon council. This ordinance was carefully prepared by a representative committee of the council, and was passed with the concurrence of all the members.

#### HEALTH.

I am pleased to report that during the summer the territory has been absolutely free from any epidemic or serious diseases, this, no doubt, being due to the fact that early in the season stringent steps were taken by the territorial medical health officer at Dawson to enforce the sanitary regulations.

#### SOCIAL CONDITIONS.

It is also gratifying to be able to report that there have been no serious crimes committed in the territory, and that the community has maintained during the past season its enviable record for being the most law-abiding placer mining camp in the world.

#### BUSINESS-LABOUR.

Those engaged in mercantile pursuits have had a good season, and report business as being on a more solid basis than formerly. During the summer, the construction of the Klondike Mines railway, the assembling of dredges, the government construction of roads, and the construction of large retaining dams, and the hydraulic and power systems by the Yukon Consolidated Goldfields Company, created a demand for labour which at no time was adequately supplied. This demand for labour will be equally as great next year. The Klondike, therefore, offers a splendid field during the summer for the mechanic and unskilled labourer, as wages are high and work plentiful.

#### CONCLUSION.

In conclusion, I may say that during the past summer the Yukon Territory has taken on a new lease of life, there has been a complete renaissance. Happily the activity which has been so conspicuous in every branch of industrial life has been of such a nature as to assure a continued and increasing development of the territory.

I have the honour to be, sir, Your obedient servant,

W. W. B. McINNES,

Commissioner.

STATEMENT of the number of Creek claims with adjoining hills and benches worked during the past season in the Yukon Territory, showing the method of mining employed.

Name of Creek.	Number of Creek Claims Working.	Method of Mining.	Number of Bench and Hill Claims Working.	Method of Mining.
Eldorado	1 3 None. 5 4	Placer	French Hill  1 Hillside  None.  2 Hillsides	11
Trail Gulch	None.		3 Hill Groups 5 " 1 "	Hydraulic.
Klondyke River	Boyle Concession Bonanza B.G.D. Co.	Dredge	4 "Y.C.G.F. Co	11
Mint Gulch Gold Bottom Ester Independence	None.	Placer	None.  Hillsides	
No. 80 Pup	6 2	Hydraulic	5 Hill Groups	Placer.
Henry Gulch Dominion Caribou Gold Run	2 89 3	H	None.	Ground sluicing.
EurekaSulphurQuartzGlacier Creek	23 23 20	11	1 Bench  None.  17  None.	Quartz. Placer.
Miller	Concession.	2 Placer 3 Hydraulic Hydraulic	Concession.	11
Duncan Highet Livingstone	7	Placer		Considerable
Bonanza	24 $20$	20 Placer	12 Benches Williams Con	Placer.  Hydraulic.
	Anderson Concession	H	6 Hillsides	Placer.

Gold Hill, Chechaco Hill, Adams Hill, American Hill, King Solomon Hill, Boulder Hill, No. 49 Hill and Bunker Hill, were extensively worked by hydraulics.

Whiskey Hill, Delhie Hill, Temperance Hill, Paradise Hill, No. 70 Pup Hill, Independence Hill, Dag Hill and No. 80 Pup Hill were extensively worked by hydraulics.

Bullion. Large group, hydraulic. Kimberly. Few claims, hydraulic.

Kluane Creeks. About 50 claims, placer.

Walsh. Few claims, placer.

Barker

Black Hills Creek. Few claims, placer.

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